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**TITLE PAGE:**

# Mantra Meditation Programme for Emergency Department Staff: A Qualitative Study

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## ABSTRACT

**Objectives:** Rates of burnout and stress in healthcare practitioners (HCPs) are steadily increasing. Emergency Department (ED) staff are particularly susceptible to such poor outcomes. Mantra meditation (MM) may contribute to increased wellbeing. The aim of this study was to obtain in-depth qualitative feedback on ED staff's experience of a MM programme, and to determine the necessity, feasibility and practicality of implementing a meditation programme in a hospital setting to support the health and wellbeing of HCPs.

**Design:** Qualitative study.

**Setting:** Emergency Department in [hospital name removed for blind peer-review].

**Participants:** Doctors, nurses, allied health professionals and administrative staff working in the ED.

**Method:** Semi-structured interviews were conducted with a diverse sample of ten ED staff members. Interviews were transcribed and thematically analysed.

**Results:** Four main themes were identified: the need for intervention; perceived personal and professional benefits of mantra meditation; barriers to meditation practice and the need for continued support to embed the practice upon cessation of the programme.

**Conclusion:** Mantra meditation is an effective and feasible tool for HCPs to utilise to reduce stress and improve wellbeing. This may have important consequences for wider healthcare issues such as patient safety and quality of care. Support from the organisation is integral to aiding participants embed the practice of meditation into their daily lives.

**Keywords:** mantra, meditation, healthcare professionals, emergency department, wellbeing, qualitative study

## STRENGTHS AND LIMITATIONS

- In-depth interviews offered an exclusive insight into the personal experiences of mantra meditation from the perspective of emergency department staff.
- The study utilised a validated qualitative approach (thematic analysis) to analyse the rich and complex data, thus contributing important new insights to existing research on the benefits of meditation for healthcare practitioners.
- The study addresses issues of feasibility in implementing a wellbeing programme for emergency department staff, providing a unique insight into what works and what doesn't for future research in occupational health interventions.
- Adherence to mantra meditation practice was not consistent across participants, which must be taken into consideration when interpreting results.

## INTRODUCTION

Healthcare practitioners (HCPs) are experiencing escalating levels of burnout and stress, faced with excessive working hours, bureaucratic pressures and a persistent culture of presenteeism in an increasingly depersonalised healthcare system.[1-4]. The level of burnout amongst doctors and nurses exceeds that of any other professional working group,[5 6] with emergency doctors in particular reporting the highest percentage of burnout of over twenty-five different healthcare specialties in a large-scale study in the United States.[7] The implications of such a working environment are detrimental, and include compassion fatigue, cynicism,[8] depression[9] as well as suicidal ideation,[10] plans and attempts.[11] The adverse consequences extend far beyond the wellbeing of the individual, and are reported to have a wider impact on patient safety, quality of care,[12-15] absenteeism[16] and early retirement,[17 18] thus making it an issue of critical importance not only for the HCP, but for all stakeholders in the healthcare industry.

While there are numerous studies on the various sources of stress for doctors, nurses and allied health professionals (AHPs) working in an emergency setting, studies on interventions to offset the occupational stress associated with such a demanding work environment are comparatively scarce. In the general population, there is growing evidence to support the benefits of meditative practice (amongst other mind-body interventions such as mindfulness and yoga) and its potential as a technique to positively impact the health and wellbeing of HCPs is being increasingly recognised. For example, a recent US study that examined doctors and nurses undertaking a 'Heartfulness Meditation' programme demonstrated significant improvement in all measures of burnout following the 12-week course.[19] Similarly, widespread reductions in stress and anxiety were reported in registered nurses in the US after a one-month biofeedback-assisted meditation programme.[20]

Mantra meditation (MM) or mantram repetition (which includes Transcendental Meditation TM®) involves the act of repeating a word or phrase, silently or aloud, and is considered an ancient practice with roots in spiritual traditions. Recently, MM has emerged as a 'rapid-focus tool' for training attention and calming the mind.[21] Advocates have suggested that MM offers a number of practical advantages over other types of mind-body interventions including simplicity and portability.[22] MM has been employed as an intervention to limit stress in healthcare workers in a small number of studies, resulting in improvements in self-reported spiritual wellbeing, mindfulness traits, stress, anxiety, anger and quality of life.[23-25] Such workplace health programmes have been identified by the World

Health Organisation (WHO) as one of the 'best buy' options for mental health and wellbeing of employees.[26] Nonetheless, rigorous evaluation is essential if such interventions and programmes are to be successfully integrated into the busy working environment and lives of HCPs. The acquisition of in-depth qualitative feedback is considered to be a crucial aspect of this process; complementing, elaborating and enhancing the quantitative evaluation by providing enriched understanding and descriptions of personal experiences of MM, as it is situated and embedded in a local context.[27 28] The qualitative methodology described here also offered the most appropriate platform upon which to explore staff wellbeing as it is currently perceived. Furthermore, this study provided an ideal opportunity to assess the feasibility of implementing MM programmes in a hospital setting, and to identify any potential barriers to practice.

**Study Objectives**

The focus of this study was twofold:

1) Report on a systematic qualitative evaluation of a MM programme (described in more detail below) in an ED setting by harnessing participant's experience and perceived benefits of the programme.
2) Investigate the feasibility of implementing this meditation programme as an aid to improve wellbeing and reduce burnout among HCPs.

## METHODS

### Mantra Meditation (MM) Programme

The meditation programme was developed and co-facilitated by an expert in the field of healthcare and an expert in the field of meditation. The objectives of the programme were to teach participants the basic principles and practice of MM, to support the embedding of the practice of mantra meditation in their daily lives, and to facilitate the development of an increased level of awareness. The programme was delivered in the hospital over four sessions, each four hours long. The sessions followed a structured manual and combined meditation practice and discussion of prescribed texts related to meditation practice and the meaning of healthcare. Participants were also asked to meditate independently for 20 minutes twice a day (preferably morning and evening).

### Design

Between June and July 2017, a member of the research team conducted individual, face-to-face, semi-structured interviews with participants in the mantra meditation programme. The interviews were aided by a topic guide (Table 1) and explored all matters of interest including feedback on programme delivery, perceived barriers and enablers to practice, impact of the programme on work and feasibility of continued practice. The open-ended format of the interviews was selected in order to allow the participants to thoroughly explore their experience and perception of the programme.

Ethical approval was granted by [institution name removed for blind peer-review]. Participants were advised that they could withdraw from the study at any time and were informed that all transcripts would be anonymised.

**Table 1**
**Topic Guide**

| Interview topics | Sample questions |
|---|---|
| Rapport-building | • Can you tell me a bit about your role in the Emergency Department? How would you describe your work?<br>• What was your motivation for taking part in the meditation programme?<br>• What was your experience of meditation during the programme? |
| Impact of meditation programme on self | • What has work been like for you since taking part in the programme?<br>• If you were to compare yourself before and after taking part in the programme, what observations would you make, if any?<br>• Can you tell me about any changes you may have noticed in how you perceive yourself? |

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| Impact of meditation programme on others | • Can you tell me about any changes in how you perceive others? Colleagues/patients/your interactions with them? How do you think this programme has been perceived by staff in the Emergency Department?<br>• If you were to compare you colleagues before and after taking part, what observations would you make, if any?<br>• If you were to compare the working environment in the Emergency Department before and after the programme, what observations would you make, if any? |
| Current practice and looking forward | • Can you tell me about your meditation practice since the programme has ended?<br>• Can you tell me about some of your external/internal challenges to practicing meditation?<br>• What would help you to maintain a consistent meditation practice? |

## Participants and Recruitment

Overall, 17 members of ED staff attended the mantra meditation programme and all were invited to take part in an interview. Ten participants (*F*=8, *M*=2) were recruited to interview with a member of the research team to describe their experience of the programme. These individuals were representative of the roles and gender breakdown of the wider group; they occupied a diverse range of roles within the ED (e.g. nurse practitioner, emergency doctor, AHP) and varied considerably in their length of experience working in the ED (nine months to 17 years). Further breakdown of individual participant characteristics will not be provided to preserve anonymity. Participation was voluntary and no remuneration was offered. Length of interviews ranged from 16 to 58 minutes (*M*=38.28, *SD*=11.91).

## Data Analysis

Interviews were audio-recorded and transcribed verbatim by a professional transcription service. The accuracy of transcription was cross-checked by a member of the research team and any identifiable participant information was removed. QSR International's NVivo 11 (qualitative data analysis software, v.11) was utilised to facilitate organisation of the data and data analysis. Thematic analysis methodology[29] guided analysis of the data and involved familiarisation with the data, generating initial codes, searching for themes, reviewing and refining themes, and defining final themes. A second member of the research team coded an interview transcript independently to assess inter-rater reliability and any differences in the interpretation of the data were discussed. Agreement was high in the comparison of codings. There was some minor editing of the quotes to ensure clarity of meaning and in some cases, to preserve anonymity.

## RESULTS

Thematic analysis resulted in the identification of four prominent themes emerging from the data: 1) the need for a wellbeing programme/intervention; 2) perceived benefits of the programme, both personally and professionally; 3) barriers to practice; and 4) the need for continued support following cessation of the programme. Table 2 provides an overview of the key themes, subthemes and illustrative quotes.

### Theme 1: Need for Programme

Each interviewee expressed in some capacity the urgent need for a programme of support to be implemented within their department and the wider hospital in general. This was largely evident in comments and discussions about the complexities of cases that present to the department, the everyday ED working environment, and the subsequent impact of this working environment on staff wellbeing.

Several participants made reference to the nature of uncertainty that pervades the ED on any given day; HCPs often experience "an element of impending doom" or anxiety prior to their work shift. It was acknowledged that death in the ED (which is almost always sudden and unexpected) can be particularly difficult to manage and that while patients are being attended to for their physical injuries, they tend to disclose their own personal stories and issues onto the HCP.

> "There is huge complexities behind all of their stories… you might have…addressed their injury but then there is the whole [story], you are kind of counselling nearly, I find in this job you are counselling a lot and I suppose that is probably part and parcel of what the nurse does and that development of that relationship you have with your patients but it can get very heavy at times with what they are telling you, you know."

The ED working environment was regularly cited as taxing, with most participants referring to sheer exhaustion, poor sleep patterns, being under-staffed, difficulty adjusting to shift-work and just constantly feeling "switched on".

> "You go home and you are either absolutely wired or you crash and burn and you don't intervene and then you're kind of tossing and turning, nearly anxious waiting for the next day. Then you get up and do it all again."

It was noted by several participants that staff are torn in different directions and that stress emanating from one person often eventually filtered around to everybody else, from reception

staff and cleaners to doctors and nurses. Generally, every participant recognised the need for some programme of support for the ED staff, and highlighted the unfeasibility of continuing to work at that pace.

> "You can't keep running at a certain pace without intervening because as I say, it is like a marathon, you come in and you face the same thing every day, day in day out and you will burn if you don't mind yourself and you don't take care of yourself."

> "You can't maintain that without having either some mental or physical effects."

The taxing environment of the ED lends itself to staff burnout and exhaustion, to such an extent that some members of staff noted that 10 years as an emergency nurse is the maximum amount of time you can give to the profession. Participants reported poor work-life balance, with workers finding it difficult to "cease the chatter" of their minds when they return home.

**Table 2**
**Themes, subthemes and illustrative quotes**

| Theme | Subtheme | Illustrative quotes |
|---|---|---|
| **Need for Programme** | -- | "Burnout is high and stress levels are very high, especially in the ED."<br>"It is stressful, it is tough and you are short-staffed and nights can be pretty taxing."<br>"We are in an environment that is highly stressed, it is constant, it is traumas, it is just constantly switched on."<br>"We have to do something down there in terms of wellbeing."<br>"There has to be an intervention because, as I say, it will just have grave effects I think on people's health"<br>"You cannot keep running at this sort of pace constantly, it's just not doable." |
| **Perceived Benefits of Programme** | **Personal** | "Instead of leaping in there, I just take a breath and step away. You know nothing major I am talking about just general home stuff, kids and husbands."<br>"I think it does enable you to kind of just see things from a different angle maybe."<br>"I would definitely say I am a calmer person."<br>"I have actually pulled back a bit from being tremendously busy, like trying to be busy all the time." |
| | **Professional** | "I think my coping mechanisms at work are a lot better."<br>"People can come up to you and they can be quite forthright in whatever they say and it is literally just say the word and then just to yourself and deep breath and then you go, "OK, let's deal with this now", instead of getting all tensed up and angry with somebody who is blaming you for something that is not your fault basically."<br>"I sort of got a bit too sucked in to work and I found it very hard to escape it really. I felt my whole world was dominated by my job and now that has kind of stopped now." |
| **Barriers to Practice** | **Role/Occupation (shift work, changing schedules)** | "If you are in a senior role on the floor you kind of can't really leave the department (to meditate) because if something kicks off you have to be there to respond."<br>"Because of my role, I'd say it was, just from personal experience, it was harder to adjust because it's not a kind of a uniformed shift pattern so it could be 8am to 6pm one day, 4pm to midnight the next day, and then 8am to 6pm, you know…and then when you get home after such a busy day unless you set an alarm or something like that, you'd be asleep before you'd go, "Christ, meditate!"<br>"Doing this amongst ED staff is probably the hardest group of people to do it with." |
| | **Length of Practice** | "I think that going from never experiencing it into jumping straight in, 20 minutes twice a day I found that quite hard."<br>"The shorter time would make it a lot more viable in the department I would think." |
| | **Individual Differences** | "I would be a doer, go, go, go and a lot of people in the department would be kind of the same that kind of temperament. So then when you have to sit down and sit still and think about things or not think about anything, I found it really hard to switch off."<br>"I think you have to the right personality as well, like, you know, it is not something that, if meditation worked for one person, it mightn't necessarily work for the next person." |
| **Need for** | **Support at an Organisational Level** | "I personally think it needs to be part of our paid working day to really promote it to be best practice."<br>"It's all down to staffing – if you had enough staff you could do protected time and you'd say, "Okay we're doing a meditation, a group meditation for 20 minutes upstairs or 10 minutes upstairs. Go on up."<br>"I think if it was incorporated as part of our day so I think if there was an extra 15 minutes each side of each shift incorporated for meditation." |

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| **Continued Support** | | "I found actually doing it in the group was a lot easier than doing it on my own." |
| | **Support from Each Other** | "Since the programme has ended, I have kind of lost the focus again with the meditation and I just wonder if there was another workshop would it kind of refocus you." |
| | | "I just think we need to kind of get together perhaps as a group and set up something by ourselves or take the lead on it by ourselves otherwise it will fall, like it will fall apart." |

## Theme 2: Perceived Benefits of the Programme

In discussing their experience of the meditation programme, staff cited a myriad of benefits in both their personal and professional lives. One of the key personal benefits that arose amongst participants was a sense of heightened awareness. This included an awareness of situations around them whereby they felt better equipped to see things from a different angle, as well as an improved awareness of themselves.

> "I was always one to say, "I'm not stressed, I'm not stressed", through clenched teeth and believe it. Whereas now I'm saying, "Hang on, I'm very stressed and I'm taking it out on…"."

Other mentioned benefits include a notable improvement in sleep and the cultivation of patience and a non-judgmental attitude. Of particular significance amongst participants' experience of the programme was the perceived positive impact of meditation on their work. Some participants talked about improved coping mechanisms while at work, and feeling more competent at managing emotionally-laden, stressful, emergency situations.

> "I used to get emotional when stuff would come in to Resuscitation, but now I kind of… I think I have just learned to manage it better."

Participants discussed how the programme and practice of meditation helped them to refocus, particularly when faced with a long shift and priorities and objectives had to be decided upon. This sense of 'refocusing' was also echoed in their interactions with patients, and the process of moving from one patient within emergency to another.

> "I think hopefully this will improve recovery…you're dealing with an emergency that has been dealt with and they move on, but I need to be able to (move on) and it is about me, I need to be able to recover quickly, so I can give the next patient my full attention. Because I know sometimes if I am worried about somebody, I will be distracted with the next patient. So I felt this would actually help my recovery as such, so that I will have full attention for the next patient."

A number of participants suggested that the sense of calm that one acquires following meditative practice could even directly impact their patient's sense of confidence and security in the ED staff. One participant observed that if a patient can see that the HCP is calm and relaxed, they will feel calmer and more relaxed as a result.

> "I want the patients to feel, 'Okay, I'm reassured that they know what they are doing, they are competent, I can relax with it, I am in their hands'."

One participant suggested that this impact could be as far-reaching as reducing the patient's oxygen demand, by slowing down their breathing and thus their cardiac output, which is something that could be critical in an emergency setting.

**Theme 3: Barriers to Practice**

Participants reported several major barriers to practicing meditation as advised by the training programme. These barriers include the practicalities of their role (i.e. shift work, changing schedules), the recommended length of practice, and the typical profile or personality of a HCP. Each of these barriers, although discussed separately in interview, are inextricably linked.

Each interviewee expressed at least some difficulty in maintaining the twice daily 20-minute meditation practice as advised by the programme facilitators and several participants commented that the need to meditate and adhere to the practice was driven by their participation in the study, rather than actually contributing towards their own health. Participants reported difficulty staying with the meditation for the full 20 minutes, as well as difficulty finding an appropriate time period during the day in which to fit the practice. The presence of other people, both at work and at home, acted as an interference to the practice for many participants and they experienced difficulty sourcing a place where they could meditate without being interrupted. Several participants recommended that the practice be gradually built up over time, perhaps starting with five minutes twice a day or ten minutes once a day.

> "It's like training for something… you are not going to go off and do a 10K [run] if you can't do that or if you know that you don't have the time to do it, so start off with doing something achievable and then build on it."

It was suggested that this would encourage the development of a more sustainable and feasible practice for novice meditators. The role of the individual in the ED and the practicalities of their contract (i.e. long working hours, night shifts, changing schedules) was also implicitly proposed as a barrier to developing regular practice. This varied amongst participants (i.e. an allied health professional could have regular working hours Monday-Friday), however for the most part, uniform shift patterns are not common for ED staff, making it difficult for them to incorporate daily meditation into their schedule as a concrete

habit. Similarly, the strenuous work environment inevitably results in fatigue which also poses a barrier to an evening practice.

> "…When we came home it could be half nine or ten o'clock, you are prepping your food for the following day if you were in the following day…but sometimes you go home and you are just flat like, you are just exhausted and you are kind of there opening your eyes partly wondering how long is left on the timer (of the meditation app)"

> "…There was a period at work where things were just mental and that fatigue hits in, and you are just like, "Oh no I will do it tomorrow"."

The unpredictable nature of the work in the ED means that it is not feasible to dedicate protected time to meditate during the working day. Staff can never be too far away from the department at any given time in case they are urgently needed, and, as noted by one participant, it is often a case of "Okay everything seems steady at the moment, run for food", as opposed to having a protected lunchbreak in which they could find the time to meditate.

Finally, it was notable that many of the staff considered themselves to be highly active, outgoing individuals, and they felt this contrasted with what was being asked of them in meditation practice.

> "I think we have all got similar personality types and you know of being fast paced, busy you know go, go, go, I think we are probably the hardest group you will find to switch off a little bit."

An interesting concept was brought to light by one participant who explained that what drew them to working in that kind of an environment in the first place, was the very thing that was preventing them from committing to meditative practice.

> "I think what led me to Emergency was what stood against me delving fully into mantra meditation, as in sitting still and not focusing. Whereas I like to be kind of hypermobile in the department, if I'm sitting for more than 5 minutes I have to get up and check another patient or do that. So it was the actual disconnect that I was like, "Woah hang on, I'm not used to this"."

There was a distinct sense from the transcripts that participants believed certain people 'fit the bill' for meditation, whereas others didn't. Those who 'fit the bill' tended to be described as more easy-going, with mellow personalities.

> "There are a huge amount of different personalities in the ED, the majority of them are really strong, opinionated, loud personalities, you know and I don't know if meditation would suit everybody."

**Theme 4: Need for Continued Support**

A strong desire to continue with daily meditation practice and a wish to thoroughly integrate meditation into the workplace was clearly evident throughout the interviews. In discussing barriers and enablers to meditating in the future, participants talked about the continuum of support that would be required going forward. This support would be required at both an organisational level and at an individual/group level.

Support of the meditation programme and daily practice from the organisation (i.e. the hospital) was broken down by participants and generally fell into the category of either protected time or protected space. Support at an organisational level would mean that enough staff are scheduled to work for somebody to leave the floor to meditate for a brief period of time. Similarly, this individual would be able to leave the department to meditate without feeling guilty about leaving their colleagues, or for getting "raised eyebrows".

> "I'd say during the day if you were going off to tell somebody in the middle of a shift that you were going off to do your meditation, it would kind of be seen as…not favourable…."

There was also a recognised need for a protected space to meditate while in work. Although seminar/break rooms exist, they were not considered conducive to facilitating daily practice due to the relentless Tannoy (loudspeaker) system, among other interruptions. The hospital chapel was an option for some members of staff, but it was too far away from the department to be feasible for emergency doctors or nurses. Overall, there was a general consensus that support at an organisational level would be paramount to embed meditation practice for ED staff going forward.

> "I personally think it needs to be part of our paid working day to really promote it to be best practice."

On par with support from the hospital was the importance of group support in both the training programme and in encouraging daily meditation practice thereafter. With the exception of one, most participants found meditating in a group much easier, more enjoyable and felt they were better able to stay focused, in contrast to meditating alone. This was attributed to a sense of being accountable to other people rather than just being accountable to yourself, as well as an attitude of "If they can do it, I can do it".

The importance of the group for the training programme was instrumental to teasing out barriers and enablers to practice.

> "As a group I think it has been really good to listen to other people's experiences and them relaying the same to you and having a bit of collaboration amongst the group."

Similarly, outside the programme, the group offered support and encouragement to each other in order to help maintain regular practice; furthermore, members of the intervention group looked forward to other members of staff completing the MM programme so that they might have more colleagues to share their practice with.

> "It will be really interesting when the second group do it because then there will be twice as many of us having done it and hopefully it will just bounce off each other to promote it."

Drop-in group meditations, refresher sessions and other supports such as social network groups were suggested as potential methods to support the staff in their continuation of meditation practice once the training programme ceased. This was considered vital as participants relied quite heavily on the training sessions to refocus and re-motivate themselves to engage in MM practice.

## DISCUSSION

In this study, we conducted semi-structured interviews with the objective of developing a MM training programme for HCPs in an ED setting. Our intention was to fully explore participants' experience of the programme as well as to obtain crucial information on issues pertaining to programme necessity and feasibility. These interviews offer valuable insights into the perceptions of staff wellbeing in the ED, the potential benefits that meditation could bring to the personal and professional lives of study participants, as well as barriers and enablers to maintaining consistent MM practice as busy HCPs in an ED environment.

Our findings offer a compelling argument for the implementation of a MM programme for busy ED staff. This need is deemed to be not only legitimate, but absolutely essential. The relentlessly fast-paced culture, inconsistent shift work and the nature and severity of cases that present to the department on a daily basis, make for a stressful working environment. More so than other healthcare specialities, emergency department staff leave their profession early[30] and are at heightened risk of burnout[7]. Participants appeared to be fully cognisant of the detrimental impact of such a working environment on their wellbeing and demonstrated a clear interest in developing a meditation programme within the department.

Participants reported widespread benefits of practicing MM that filtered through from their personal lives into their professional lives. These included improved self-awareness, acceptance and an ability to 'let things go', a non-judgmental attitude, and enhanced attention, as well as improved sleep quality. While some participants found meditation practice useful to help them fall asleep, others found that the daily practice improved the quality of their sleep. This has important consequences for the applicability of an MM training programme in an ED. Circadian rhythm disruption (CRD; an interruption to the internal body clock that regulates the 24-hour cycle of biological processes[31]), is common amongst those who carry out shift work. ED staff are particularly susceptible to CRD[31] and can experience widespread ill-effects on their wellbeing as a result. It is possible that MM might buffer the effects of CRD by helping to improve the sleep quality of ED staff, thus boosting their overall health and productivity. Improved focus and attention among practicing ED staff might also contribute to enhanced patient safety, quality of care and patient satisfaction.

Despite the observed and widely cited benefits, participants of the programme acknowledged difficulties in maintaining the recommended frequency and duration of meditation practice (practice compliance). This has important implications for the future development of this specific training programme and indeed other meditation programmes. Respondents placed a strong emphasis on the importance of building up meditation practice gradually rather than attempting too much too soon. The meditation practice target of 20 minutes, twice daily seemed to have a detrimental impact on practice compliance and sustainability; some participants who approached the practice with an 'all-or-nothing' attitude, stopped practicing completely. Difficulty with adherence to meditation practice is understandable considering the long work hours and changing schedules of ED staff, and is likely a common issue for any interventions rolled out to this specific cohort. In addition, it raises some interesting questions about the challenges that researchers and educators face when attempting to emphasise the importance of health and wellbeing amongst HCPs, not only in emergency medicine, but across all healthcare specialities.

A prominent culture of presenteeism[1 32] suggests that HCPs may have little insight into their own health and wellbeing, and a dearth of self-care and wellbeing training in medical school curricula[33] demonstrates that little emphasis is placed on a preventative or pro-active approach. This was reflected in several participants' comments whereby they felt the need to meditate and adhere to the practice solely for the sake of the research, rather than actually contributing towards their own health. These responses have important implications for the delivery of meditation programmes among HCPs and highlight the need for active discussion if there is to be a culture change.

It is clear from the findings in this study that further sustained and continued support is wanted and required if meditation programmes are to become embedded into busy hospital environments. This support would ideally be offered in both formal and informal settings, with follow-up workshops and retreats offered by specialist facilitators, as well as more casual staff-organised group meditation sessions (daily, weekly or monthly). It is acknowledged that the provision of this additional support, as well as the running of the MM programme itself, would be at a cost to the hospital or institution facilitating the programme for its staff. Nonetheless, it is likely that the potential cost of absenteeism, early retirement and sick leave as a result of burnout outweighs the cost of implementing meditation programmes. A recent Canadian study calculated the total cost of burnout for all practicing physicians in Canada to be $213.1 million.[17] The hard return on employee wellness

programmes is undisputed; the multinational company Johnson & Johnson estimated that in-house wellness programmes cumulatively saved the company $250 million on health care costs between 2002 and 2008.[34] It is time that employee wellness programmes progress from being viewed as optional extras, to becoming strategically imperative, particularly in over-worked, under-resourced hospital departments.

**Strengths and Limitations**

This qualitative study contributes to the literature as the first known study of a MM programme for ED staff. The richness of evidence harnessed via this methodology thoroughly complements and enhances existing quantitative studies. While the questions employed in the interviews described in this study were open-ended, response bias is inevitable in qualitative research and must always be taken into consideration. However to ensure high rigour, we employed a validated method to analyse the data; thematic analysis. Additionally, independent researchers unknown to the participants conducted and analysed the interviews to reduce any risk of bias. The study participants were diverse in their roles and work experience, implying that these findings could be applied to different healthcare professionals. The meditation training programme itself was deemed feasible to implement, with only two trained facilitators, text materials and classroom space required for sessions. This makes for a convenient and practical intervention that could be applied in the majority of hospital settings.

As the participants struggled to maintain consistent adherence to MM practice over the period investigated, increased adherence might proffer different findings as well as more consistent and robust benefits. Further research in this area is warranted, with opportunities to explore the implications of such a programme on wider hospital operations (including patient safety and quality of care), as well as the feasibility, accessibility and effectiveness of implementing such wellbeing programmes in an emergency department setting.

## CONCLUSION

This study offers in-depth qualitative feedback on participants' experience of a MM programme. An overview of the ED working environment as conveyed by participants advocates the need for such a programme of support for staff. Participants provided a unique insight into their perception of the practice of MM and how it fit into their personal and professional lives. The personal and workplace benefits that were widely cited suggest that the implementation of such a programme would have far-reaching positive consequences for both employees and employers. An appreciation of the barriers that the participants faced clearly conveys that flexibility is key when attempting to integrate sustainable meditation practice among this population. The identification of such barriers and enablers may shed light on what works and what doesn't for other researchers wishing to implement any meditation/mindfulness/stress reduction programmes with a hospital staff population. Support from the organisation is not only necessary for sustained practice, but should be viewed as a strategic imperative.

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This research was sponsored by the Health Service Executive. Authors declare no competing interests. Study sponsor had no involvement in study design, data collection, analysis or interpretation, writing of the report, or deciding to submit the paper for publication.

## DATA SHARING STATEMENT

As per the ethics approval, the data will not be shared outside of the participating research institutions. Any sharing of the data beyond the group will be subject to review by the host institution (Royal College of Physicians of Ireland) and to independent research ethics application. Any queries on how to access the dataset should be directed to the corresponding author or research@rcpi.ie.

## CONTRIBUTORSHIP STATEMENT

COL, RB, BW, LP, PD, GMcM, CW and AC were involved in conceiving and designing the study. Data collection was carried out by COL. JL and LP were responsible for data analysis and interpretation. JL wrote the first draft of the manuscript. COL, RB, BW, LP, PD, GMcM, CW and AC contributed to subsequent drafts and were involved in the critical revision of the article for important intellectual content. All authors approved the final version of the article to be published.

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# Mantra Meditation Programme for Emergency Department Staff: A Qualitative Study

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**TITLE PAGE:**

# Mantra Meditation Programme for Emergency Department Staff: A Qualitative Study

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## ABSTRACT

**Objectives:** Rates of burnout and stress in healthcare practitioners (HCPs) are steadily increasing. Emergency Department (ED) staff are particularly susceptible to such poor outcomes. Mantra meditation (MM) may contribute to increased wellbeing. The aim of this study was to obtain in-depth qualitative feedback on ED staff's experience of a MM programme.

**Design:** Qualitative study.

**Setting:** Emergency Department in St. James' Hospital, Dublin, Ireland.

**Participants:** Doctors, nurses, allied health professionals and administrative staff (*n*=10, eight females, mean age 35.6 years) working in the ED who attended a mantra meditation programme.

**Method:** Semi-structured interviews were conducted by a trained independent researcher. Interviews were transcribed and thematically analysed.

**Results:** Five main themes and six subthemes were identified: work pressure and perceived stress; perceived benefits of meditation, with subthemes of attention/awareness, emotional regulation/coping mechanisms, sleep; conflicting attitudes to practice; barriers to meditation practice, with subthemes of schedule, length of practice and individual differences; and facilitators to practice.

**Conclusion:** ED staff found the mantra meditation programme to be an effective and feasible tool for HCPs to reduce stress, improve emotion regulation and increase one's capacity for attention and awareness. This may have important consequences for wider healthcare issues such as patient safety and quality of care. Support from the organisation is integral to aiding participants embed the practice of meditation into their daily lives.

**Keywords:** mantra, meditation, healthcare professionals, emergency department, wellbeing, qualitative study

## STRENGTHS AND LIMITATIONS

- In-depth interviews offered an exclusive insight into the personal experiences of mantra meditation from the perspective of emergency department staff.
- The study utilised a validated qualitative approach (thematic analysis) to analyse the rich and complex data, thus contributing important new insights to existing research on the benefits of meditation for healthcare practitioners.
- The findings from participant interviews highlight potential issues of feasibility in implementing a wellbeing programme for emergency department staff, and provide a unique insight into what works and what doesn't for future research in occupational health interventions.
- Adherence to mantra meditation practice was not consistent across participants, which must be taken into consideration when interpreting results.

## INTRODUCTION

The prevalence of burnout amongst healthcare practitioners (HCPs) exceeds that of any other professional working group.[1 2] Emergency medicine doctors in particular report the highest percentage of burnout of twenty-five different healthcare specialties in a large-scale US study[3], with similar findings documented in Ireland.[4] The implications of such a working environment are detrimental and include compassion fatigue, cynicism,[5] depression[6] and even suicide.[7 8] The adverse consequences extend far beyond the wellbeing of the individual, and are reported to have a wider impact on patient safety, quality of care,[9-12] absenteeism[13] and early retirement,[14 15] thus making it an issue of critical importance not only for the HCP, but for all stakeholders involved in healthcare delivery.

There are numerous studies on the various sources of stress for doctors, nurses and allied health professionals (AHPs) working in the emergency setting, however, studies on interventions to offset this occupational stress are scarce. In the general population, there is evidence to support the benefits of meditative practice (amongst other mind-body interventions such as mindfulness and yoga), and its potential to positively impact the health and wellbeing of HCPs is being increasingly recognised. A recent US study of HCPs undertaking a 'Heartfulness Meditation' programme demonstrated significant improvements in all measures of burnout following the 12-week course.[16] Significant reductions in stress and anxiety were also reported in nurses after a one-month biofeedback-assisted meditation programme.[17]

Mantra meditation (MM) or mantram repetition (which includes Transcendental Meditation TM®) involves the act of repeating a word or phrase, silently or aloud, and is considered an ancient practice with roots in spiritual traditions. Recently, MM has emerged as a 'rapid-focus tool' for training attention and calming the mind.[18] It has been suggested that MM offers a number of practical advantages over other types of mind-body interventions including simplicity and portability.[19] MM has been employed as an intervention to limit stress in healthcare workers in a small number of studies, resulting in improvements in self-reported spiritual wellbeing, mindfulness traits, stress, anxiety, anger and quality of life.[20-22] Such workplace health programmes have been identified by the World Health Organisation (WHO) as one of the 'best buy' options for mental health and wellbeing of employees.[23] Nonetheless, rigorous evaluation is essential if such interventions and programmes are to be successfully integrated into the busy working environment and lives of HCPs. The acquisition of in-depth qualitative feedback is considered to be a crucial aspect of this

process; complementing and enhancing the quantitative evaluation by providing enriched understanding and descriptions of personal experiences of MM, as it is situated and embedded in a local context.[24 25]

**Study Objectives**

The aim of this study was to systematically and qualitatively evaluate a MM programme in an ED setting by harnessing participant's experience and perceived impact of the programme.

## METHODS

### Design

This qualitative study was conducted in parallel to a randomised controlled trial (RCT) investigating the effect of mantra meditation on quantitative indicators of burnout, as well as psychological and physiological markers of health in ED staff.

The data collection for this qualitative study – individual, semi-structured interviews – was conducted in the study participants' workplace within eight weeks of the final session of the mantra meditation programme by a member of the research team (COL). The interviews followed a topic guide (Table 1); the open-ended format of the interviews was selected in order to thoroughly explore the participants' experience and perception of the programme. Length of interviews ranged from 16 to 58 minutes ($M$=38.28, $SD$=11.91). Participants were advised that they could withdraw from the study at any time and were informed that all transcripts would be anonymised. Institutional ethics committee approval was in place.

### Mantra Meditation (MM) Programme

The objectives of the mantra meditation programme were to teach participants the basic principles and practice of MM in their workplace and to support the embedding of the practice of MM in their daily lives. The programme consisted of four sessions (each four hours long) and was delivered in the hospital over a six-week period. Each session followed a structured manual and combined meditation practice, talks on different aspects of meditation (i.e. physical preparation for meditation, dealing with distractions, being and doing) and discussion of contemplative texts related to meditation practice and the meaning of healthcare (see Supplementary File 1). Additionally, participants were asked to meditate independently for 20 minutes twice a day (preferably morning and evening). The mantra used in this programme was *maranatha*, broken into four syllables: ma-ra-na-tha. The mantra meditation programme was developed and co-facilitated by a healthcare expert and a meditation expert in 2013 and was originally delivered in a classroom setting. The established MM programme was adapted to be delivered in the workplace. Neither of the facilitators were involved in any elements of the research study, e.g. data collection, analysis or interpretation.

**Table 1**
**Topic Guide**

| Interview topics | Sample questions |
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|---|---|
| Rapport-building | • Can you tell me a bit about your role in the Emergency Department? How would you describe your work?<br>• What was your motivation for taking part in the meditation programme?<br>• What was your experience of meditation during the programme? |
| Impact of meditation programme on self | • What has work been like for you since taking part in the programme?<br>• If you were to compare yourself before and after taking part in the programme, what observations would you make, if any?<br>• Can you tell me about any changes you may have noticed in how you perceive yourself? |
| Impact of meditation programme on others | • Can you tell me about any changes in how you perceive others? Colleagues/patients/your interactions with them? How do you think this programme has been perceived by staff in the Emergency Department?<br>• If you were to compare you colleagues before and after taking part, what observations would you make, if any?<br>• If you were to compare the working environment in the Emergency Department before and after the programme, what observations would you make, if any? |
| Current practice and looking forward | • Can you tell me about your meditation practice since the programme has ended?<br>• Can you tell me about some of your external/internal challenges to practicing meditation?<br>• What would help you to maintain a consistent meditation practice? |



## Participants and Recruitment

Overall, 17 members of ED staff (10% of the department) who attended the MM programme delivered as part of a larger RCT[26] were invited to take part in the qualitative study. Attendance rates varied over the course of the programme (77%, 100%, 59% and 41% for Session 1, 2, 3 and 4 respectively). Ten participants agreed to participate in the qualitative aspect of the study. The sample was representative of the gender and age breakdown (eight females, mean age 35.6 years), the roles (e.g. nurse practitioner, emergency doctor, allied health professional) and length of experience working in the ED (nine months to 17 years) of the group taking part in the RCT and the ED department. Moreover, attendance rates did not differ significantly between those who agreed to interview and those who did not. Further breakdown of individual participant characteristics will not be provided to preserve anonymity. While a greater sample size would have been favourable, upon completion of all ten interviews, data saturation was achieved.

## Data Analysis

Interviews were audio-recorded and transcribed verbatim by a professional transcription service. The transcription was checked by a member of the research team to remove any identifiable information and participants were offered the opportunity to review their transcripts. QSR International's NVivo 11 (qualitative data analysis software, v.11) was used to store and analyse the data. Thematic analysis methodology[27] guided analysis of the data (conducted by JL) and involved familiarisation with the data, generating initial codes, searching for themes, reviewing and refining themes, and defining final themes. A second

member of the research team (LP) coded an interview transcript independently to assess inter-rater reliability and differences in the interpretation of the data were discussed. Agreement was high in the comparison of codings. Minor editing of the quotes was performed to ensure clarity of meaning and to preserve anonymity. The researchers involved in data analysis (JL and LP) were experienced in qualitative data analysis and entirely independent from the MM programme to avoid confirmation bias.

**Patient and Public Involvement**

Extensive stakeholder consultation (which included a senior staff member of the emergency medicine department) on the design of the MM programme and the research study was conducted. There was no patient or public involvement in the recruitment process. The study findings will be disseminated to all study participants by way of email, in an appropriate, reader-friendly format. The final published manuscript will be made available to participants and relevant stakeholders upon request.

## RESULTS

Thematic analysis identified five prominent themes in the data: 1) work pressure and perceived stress; 2) benefits of meditation practice; 3) conflicting attitudes to practice; 4) barriers to practice; and 5) facilitators to practice (see Table 2).

### Theme 1: Work Pressure and Perceived Stress

Work pressure and perceived stress was a highly prominent theme, with every participant reporting on the pressure of their work environment encountered on a regular basis, and the need for a wellness programme to be implemented not only in the ED but also pan-hospital. This was further reflected in comments and discussions about the complexities and tragedies of patients presenting to the ED on a daily basis.

Several participants made reference to the nature of uncertainty that pervades the ED on any given day; HCPs often experience "an element of impending doom" or anxiety prior to their work shift. It was acknowledged that death in the ED (which is almost always sudden and unexpected) can be particularly difficult to manage and that while patients are being attended to for their physical injuries, they tend to disclose their own personal stories and issues onto the HCP.

> "There is huge complexities behind all of their stories… you might have…addressed their injury but then there is the whole [story], you are kind of counselling nearly, I find in this job you are counselling a lot and I suppose that is probably part and parcel of what the HCP does and that development of that relationship you have with your patients but it can get very heavy at times with what they are telling you, you know."

The ED working environment was regularly cited as taxing, with most participants referring to sheer exhaustion, poor sleep patterns, the department being under-staffed, difficulty adjusting to shift-work and just constantly feeling "switched on".

> "You go home and you are either absolutely wired or you crash and burn and you don't intervene and then you're kind of tossing and turning, nearly anxious waiting for the next day. Then you get up and do it all again."

It was noted by several participants that staff are torn in different directions and that stress emanating from one person often eventually filtered around to everybody else, from reception staff and cleaners to doctors and nurses. Generally, every participant recognised the need for a programme of support for the ED staff.

"You can't keep running at a certain pace without intervening because as I say, it is like a marathon, you come in and you face the same thing every day, day in day out and you will burn if you don't mind yourself and you don't take care of yourself."

"You can't maintain that without having either some mental or physical effects."

The working environment of the ED lends itself to staff burnout and exhaustion, to such an extent that some members of staff noted that ten years is the maximum amount of time you can give to the profession. Participants reported poor work-life balance, and found it difficult to "cease the chatter" of their minds when they return home.

**Table 2**
**Themes, subthemes and illustrative quotes**

| Theme | Subtheme | Illustrative quotes |
|---|---|---|
| **Work Pressure and Perceived Stress** | -- | "Burnout is high and stress levels are very high, especially in the ED."<br>"It is stressful, it is tough and you are short-staffed and nights can be pretty taxing."<br>"We are in an environment that is highly stressed, it is constant, it is traumas, it is just constantly switched on."<br>"We have to do something down there in terms of wellbeing."<br>"There has to be an intervention because, as I say, it will just have grave effects I think on people's health"<br>"You cannot keep running at this sort of pace constantly, it's just not doable." |
| **Perceived Benefits of Meditation** | **Awareness and Attention** | "I think it does enable you to kind of just see things from a different angle maybe."<br>"It's definitely made me more mindful (…) more aware of my surroundings"<br>"It just kind of settles you and kind of focuses you maybe a little bit more, you're a little bit clearer in what you need to [do]…"<br>"It focused me on I suppose my key objectives for the day and what I had to get done"<br>"I have actually pulled back a bit from being tremendously busy, like trying to be busy all the time." |
| | **Emotion Regulation and Coping Mechanisms** | "I think my coping mechanisms at work are a lot better."<br>"People can come up to you and they can be quite forthright in whatever they say and it is literally just say the word and then just to yourself and deep breath and then you go, "OK, let's deal with this now", instead of getting all tensed up and angry with somebody who is blaming you for something that is not your fault basically."<br>"Instead of leaping in there, I just take a breath and step away. You know nothing major I am talking about just general home stuff, kids and husbands."<br>you wouldn't let the small things bother you as much because you kind of take a step back and think, "Well, no"<br>"I think my patience is definitely a lot better than it was"<br>"I would definitely say I am a calmer person." |
| | **Sleep** | "You sleep an awful lot better, just more relaxed and you're not kind of wound up"<br>"It is a great opportunity to help you sleep and maybe that is where it should work."<br>"I feel way better in myself. My sleep has improved"<br>"I'd kind of intermittently sleep good and sleep not so good but I have been sleeping fine since this" |
| **Conflicting Attitudes to Practice** | - | "I just personally wish I was better at doing it by now..."<br>"You'd nearly feel guilty about having this time to yourself just thinking about doing nothing you know"<br>"If I could convince myself that I am entitled to this me time instead of having to do something else, then that is where I think it works better." |
| | **Role/Occupation (shift work, changing schedules)** | "If you are in a senior role on the floor you kind of can't really leave the department (to meditate) because if something kicks off you have to be there to respond."<br>"Because of my role, I'd say it was, just from personal experience, it was harder to adjust because it's not a kind of a uniformed shift pattern so it could be 8am to 6pm one day, 4pm to midnight the next day, and then 8am to 6pm, you know…and then when you get home after such a busy day unless you set an alarm or something like that, you'd be asleep before you'd go, "Christ, meditate!"<br>"Doing this amongst ED staff is probably the hardest group of people to do it with." |

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|---|---|---|
| **Barriers to Practice** | **Length of Practice** | "I think that going from never experiencing it into jumping straight in, 20 minutes twice a day I found that quite hard."<br>"The shorter time would make it a lot more viable in the department I would think." |
| | **Individual Differences** | "I would be a doer, go, go, go and a lot of people in the department would be kind of the same that kind of temperament. So then when you have to sit down and sit still and think about things or not think about anything, I found it really hard to switch off."<br>"I think you have to the right personality as well, like, you know, it is not something that, if meditation worked for one person, it mightn't necessarily work for the next person." |
| **Facilitators to Practice** | **Organisational Support** | "I personally think it needs to be part of our paid working day to really promote it to be best practice."<br>"It's all down to staffing – if you had enough staff you could do protected time and you'd say, "Okay we're doing a meditation, a group meditation for 20 minutes upstairs or 10 minutes upstairs. Go on up."<br>"I think if it was incorporated as part of our day so I think if there was an extra 15 minutes each side of each shift incorporated for meditation." |
| | **Interpersonal Support** | "I found actually doing it in the group was a lot easier than doing it on my own."<br>"Since the programme has ended, I have kind of lost the focus again with the meditation and I just wonder if there was another workshop would it kind of refocus you."<br>"I just think we need to kind of get together perhaps as a group and set up something by ourselves or take the lead on it by ourselves otherwise it will fall, like it will fall apart." |

## Theme 2: Perceived Benefits of Meditation

In discussing their experience of the meditation programme, staff cited a myriad of benefits in both their personal and professional lives. These have been further broken down into subthemes of *attention and awareness*, *emotion regulation/coping skills* and *sleep*.

### *Attention and Awareness*

One of the key personal benefits that arose amongst participants was a sense of heightened situational awareness. They felt better equipped to see things from a different angle, as well as an improved awareness of themselves.

> "I was always one to say, "I'm not stressed, I'm not stressed", through clenched teeth and believe it. Whereas now I'm saying, "Hang on, I'm very stressed and I'm taking it out on…"."

Participants discussed how the programme and practice of meditation helped them to refocus, particularly when faced with a long shift where priorities and objectives had to be decided upon. This sense of attention and 'refocusing' was also echoed in their interactions with patients, and the process of moving from one patient within emergency to another.

> "I think hopefully this will improve recovery…you're dealing with an emergency that has been dealt with and they move on, but I need to be able to (move on) and it is about me, I need to be able to recover quickly, so I can give the next patient my full attention. Because I know sometimes if I am worried about somebody, I will be distracted with the next patient. So I felt this would actually help my recovery as such, so that I will have full attention for the next patient."

This renewed attention and awareness of themselves and their surroundings extended to a more favourable work-life balance for some.

> "I sort of got a bit too sucked in to work and I found it very hard to escape it really. I felt my whole world was dominated by my job and now that has kind of stopped."

***Emotion Regulation and Coping Mechanisms***

Participants noted an improvement in coping with a hectic life at home and at work, as well as the cultivation of a more patient attitude.

> "It grounded me I suppose is a better word, but it calmed me. So even though like I think I have hundred and one jobs to do, it kind of calmed me and when I do it at work, it calms me…"

Some participants discussed improved coping mechanisms while at work, and feeling more competent at managing emotionally-laden, stressful, emergency situations.

> "I used to get emotional when stuff would come in to Resuscitation, but now I kind of… I think I have just learned to manage it better."

***Sleep***

An improvement in quality of sleep was reported by many of the participants, both for those with regular and irregular shift patterns.

> "What I have observed is that I think on the days that I am working, say if I am working today and I was working tomorrow, I don't really sleep very well. And certainly I think this is intervened, I definitely sleep better."

**Theme 3: Conflicting Attitudes to Practice**

Despite myriad accounts of the benefits of meditation on participants' personal and professional lives, some participants noted conflicting attitudes they experienced towards the practice of meditation. Such feelings (predominantly associated with guilt) arose due to not engaging successfully with the practice, or alternatively, due to taking the time out to engage in the practice when there were other jobs to be done.

> "I am just really disappointed in myself that I didn't put more effort in to the meditation…"

> "You still feel guilty sometimes, taking time out like that when there is stuff to be done or work to be done…"

There was also a distinct sense of staff feeling responsible for leaving work colleagues short-staffed, when attempting to meditate during work hours.

> "You've also got that kind of little niggle in the back of your head saying, "There's one specialist trainee doctor back there with a junior doctor and the department is heaving. So it's nice that I can get to this but, you know, our brothers in arms are back there at the coal-front fighting on six different fronts when we could have made it three", kind of thing."

**Theme 4: Barriers to Practice**

Participants reported several major barriers to practicing meditation; the practicalities of their role (i.e. shift work, changing schedules), the recommended length of practice, and the typical profile or personality of a HCP.

***Shift Work/Changing Schedules***

The role of the individual in the ED and the practicalities of their contract (i.e. long working hours, night shifts, changing schedules) was proposed as a barrier to developing regular practice by most participants. For majority, uniform shift patterns are not common for ED staff, making it difficult for them to incorporate daily meditation into their schedule as a concrete habit. Similarly, the strenuous work environment inevitably results in fatigue which also poses a barrier to an evening practice.

> "…When we came home it could be half nine or ten o'clock, you are prepping your food for the following day if you were in the following day…but sometimes you go home and you are just flat like, you are just exhausted and you are kind of there opening your eyes partly wondering how long is left on the timer."

> "…There was a period at work where things were just mental and that fatigue hits in, and you are just like, "Oh no I will do it tomorrow"."

The unpredictable nature of work in the ED means that it is not feasible to dedicate protected time to meditate during the working day as staff are expected to be close-by the department at any given time in case their services are urgently required.

***Length of Practice***

Each participant expressed at least some difficulty in maintaining the twice daily 20-minute meditation practice as advised by the programme facilitators and several participants commented that adherence to the practice was driven by their participation in the study, rather than actually contributing towards their own health. Participants reported difficulty staying with the meditation for the full 20 minutes, as well as difficulty finding an appropriate time period during the day in which to fit the practice. Several participants recommended that

the practice be gradually built up over time, perhaps starting with five minutes twice a day or ten minutes once a day.

> "It's like training for something… you are not going to go off and do a 10K [run] if you can't do that or if you know that you don't have the time to do it, so start off with doing something achievable and then build on it."

It was suggested that this would encourage the development of a more sustainable and feasible practice for novice meditators.

***Individual Differences***

It was notable that many of the staff considered themselves to be highly active, outgoing individuals, and they felt this contrasted with what was being asked of them in meditation practice.

> "I think we have all got similar personality types and you know of being fast paced, busy you know go, go, go, I think we are probably the hardest group you will find to switch off a little bit."

An interesting concept was brought to light by one participant who explained that what drew them to working in that kind of an environment in the first place, was the very thing that was preventing them from committing to meditative practice.

> "I think what led me to Emergency was what stood against me delving fully into mantra meditation, as in sitting still and not focusing. Whereas I like to be kind of hypermobile in the department, if I'm sitting for more than five minutes I have to get up and check another patient or do that. So it was the actual disconnect that I was like, "Woah hang on, I'm not used to this"."

There was a distinct sense from the transcripts that participants believed certain people 'fit the bill' for meditation, whereas others didn't. Those who 'fit the bill' tended to be described as more easy-going, with mellow personalities.

> "There are a huge amount of different personalities in the ED, the majority of them are really strong, opinionated, loud personalities, you know and I don't know if meditation would suit everybody."

**Theme 5: Facilitators to Practice**

A strong desire to continue with daily meditation practice and a wish to thoroughly integrate meditation into the workplace was clearly evident throughout the interviews. In discussing factors that facilitated their practice and factors that would enable them to continue this

practice, participants spoke primarily of support from the organisation and support from each other.

***Organisational Support***

Support from the organisation (i.e. the hospital) was broken down by participants and generally fell into the category of either protected time or protected space. Support at an organisational level would mean that enough staff are scheduled to work for somebody to leave the floor to meditate for a brief period of time.

> "I'd say during the day if you were going off to tell somebody in the middle of a shift that you were going off to do your meditation, it would kind of be seen as…not favourable…."

There was also a recognised need for a protected space to meditate while in work. Overall, there was a general consensus that support at an organisational level would be paramount to facilitating and promoting staff wellbeing going forward.

> "I personally think it needs to be part of our paid working day to really promote it to be best practice."

***Interpersonal Support***

The importance and value of group support was widely recognised, both throughout the training programme and in encouraging daily meditation practice thereafter. With the exception of one, most participants found meditating in a group much easier, more enjoyable and felt they were better able to stay focused, in contrast to meditating alone. This was attributed to a sense of being accountable to other people rather than just being accountable to yourself, as well as an attitude of "If they can do it, I can do it".

The importance of the group for the training programme was instrumental to teasing out barriers and enablers to practice.

> "As a group I think it has been really good to listen to other people's experiences and them relaying the same to you and having a bit of collaboration amongst the group."

Outside of the programme, the group offered support and encouragement to each other to help maintain regular practice and members of the intervention group looked forward to other members of staff completing the MM programme so that they might have more colleagues to share their practice with.

> "It will be really interesting when the second group do it because then there will be twice as many of us having done it and hopefully it will just bounce off each other to promote it."

Drop-in group meditations, refresher sessions and other supports such as social network groups were suggested as potential methods to support the staff in their continuation of meditation practice once the training programme ceased. This was considered vital as participants relied quite heavily on the training sessions to refocus and re-motivate themselves to engage in MM practice.

## DISCUSSION

In this study, we conducted semi-structured interviews with the objective of understanding ED staffs' experience of participation in a MM training programme. Our findings lend further support to earlier research on mind-body interventions that utilise the mantra for healthcare staff,[21 22] but also offer some valuable insights and novel contributions to the literature including perceptions of staff wellbeing in the ED, the potential contribution of meditation to the personal and professional lives of healthcare professionals, as well as barriers and enablers to implementing wellbeing programmes in healthcare settings.

A relentlessly fast-paced culture, inconsistent shift work and the nature and severity of cases that present to the department on a daily basis make for a profusely stressful working environment. Participants were cognisant of the detrimental impact of such a working environment on their wellbeing and demonstrated a clear interest in developing a meditation programme within the department. Such reports from participants offer a compelling argument for the implementation of wellbeing interventions for ED staff. While previous research has documented the positive impact of mind-body interventions such as mindfulness programmes[28] and yoga[29] on burnout and stress in healthcare staff, further research is warranted to validate and compare the MM programme with other approaches.

Similar to other studies on MM, participants reported widespread benefits of MM including enhanced attention and improved sleep quality[20]. While some participants found meditation practice useful in helping them to fall asleep, others found that the daily practice improved the quality of their sleep. This has important consequences for the applicability of a MM training programme in an ED. Circadian rhythm disruption (CRD; an interruption to the internal body clock that regulates the 24-hour cycle of biological processes[30]), is common amongst those who carry out shift work. ED staff are particularly susceptible to CRD[30] and can experience widespread ill-effects on their wellbeing as a result. It is possible that MM might buffer the effects of CRD by helping to improve the sleep quality of ED staff, thus boosting their overall health and productivity. Improved focus and attention among practicing ED staff might also contribute to enhanced patient safety, quality of care and patient satisfaction.

Despite the widely cited benefits, participants of the programme acknowledged difficulties in maintaining the recommended frequency and duration of meditation practice (practice compliance). This has important implications for the future development of this

specific training programme and indeed other meditation programmes. Respondents placed a strong emphasis on the importance of building up meditation practice gradually rather than attempting too much too soon. Those who approached the meditation practice target of 20 minutes, twice daily with an 'all-or-nothing' attitude, stopped practicing completely. Given the reported benefits despite poor adherence to meditation, future research may further explore the minimal duration of practice required in order to elicit positive outcomes for the individual.

A prominent culture of presenteeism[31 32] suggests that HCPs may have little insight into their own health and wellbeing, and a dearth of self-care and wellbeing training in medical school curricula[33] demonstrates that little emphasis is placed on a preventative or pro-active approach. This was reflected in several participants' comments whereby they felt the need to meditate and adhere to the practice solely for the sake of the research, rather than actually contributing towards their own health. These responses have important implications for the design and delivery of meditation programmes among HCPs and highlight the need for a more proactive, collaborative approach to address self-care and wellbeing training for HCPs.

The findings of this study suggest that further support is required if meditation programmes are to become embedded into busy hospital environments. This support would ideally be offered in both formal and informal settings, with follow-up workshops and retreats offered by specialist facilitators, as well as more casual staff-organised group meditation sessions (daily, weekly or monthly). The provision of these wellness-based programs will be a cost to the institution. However, the potential cost of absenteeism, early retirement and sick leave as a result of burnout potentially outweighs the cost. A recent Canadian study calculated the total cost of burnout for all practicing physicians in Canada to be $213.1 million.[14] Johnson & Johnson estimated that in-house wellness programmes cumulatively saved the company $250 million on health care costs between 2002 and 2008.[34] It is time that employee wellness programmes become strategically integral to healthcare.

**Strengths and Limitations**

This qualitative study is to our knowledge the first study of a MM programme for ED staff. We employed a validated method to analyse the data; thematic analysis. Additionally, independent researchers unknown to the participants analysed the interviews to reduce any

risk of bias. The questions employed in the interviews in this study were open-ended to mitigate against bias, however, response bias is inevitable in qualitative research and must always be taken into consideration. The study participants were diverse in their roles and work experience, implying that these findings could be applied to different healthcare professionals.

The sample represented the diverse range of roles and experience in the ED, however, a larger sample size would have benefited the study. It is possible that those who volunteered to interview were more enthusiastic about MM than those who did not. As the participants struggled to maintain consistent adherence to MM practice over the period investigated, increased adherence might proffer different findings as well as more robust benefits. While the impact of the programme on others in the department (patients and working professionals alike) was included as a point of discussion in the topic guide, insufficient information was provided by participants to elaborate on this. Further research in this area is warranted to explore the implications of such a programme on wider hospital operations (including patient safety and quality of care), as well as overcoming the practical limitations of implementing wellbeing programmes in busy clinical settings.

## CONCLUSION

This study offers in-depth qualitative feedback on participants' experience of a MM programme. An overview of the ED working environment as conveyed by participants advocates the desire for such a programme of support for staff. Participants provided a unique insight into their perception of the practice of MM and how it fits into their personal and professional lives. An appreciation of the barriers that the participants faced clearly conveys that flexibility is key when attempting to integrate sustainable meditation practice among this population. The identification of such barriers and enablers may shed light on what works and what does not for other researchers wishing to implement any meditation/ mindfulness/ stress reduction programmes in a hospital staff population. Support from the organisation is not only necessary for sustained practice, but should be viewed as a strategic imperative.

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## COMPETING INTERESTS

Authors declare no competing interests. Study sponsor had no involvement in study design, data collection, analysis or interpretation, writing of the report, or deciding to submit the paper for publication.

## DATA SHARING STATEMENT

As per the ethics approval, the data will not be shared outside of the participating research institutions. Any sharing of the data beyond the group will be subject to review by the host institution (Royal College of Physicians of Ireland) and to independent research ethics application. Any queries on how to access the dataset should be directed to the corresponding author or research@rcpi.ie.

## CONTRIBUTORSHIP STATEMENT

COL, RB, BW, LP, PD, GMcM, CW and AC were involved in conceiving and designing the study. Data collection was carried out by COL. JL and LP were responsible for data analysis and interpretation. JL wrote the first draft of the manuscript. COL, RB, BW, LP, PD, GMcM, CW and AC contributed to subsequent drafts and were involved in the critical revision of the article for important intellectual content. All authors approved the final version of the article to be published.

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**Supplementary File 1 – Overview of Mantra Meditation Programme**

| | |
|---|---|
| **Session 1** | • Introduction to Meditation<br>• Physical Preparation for Meditation<br>• A Brief History of Meditation Practices<br>• Katha Upanishad (Indian Hindu Text)* |
| **Session 2** | • Dealing with Distractions<br>• Evaluations<br>• Developing the Practice<br>• Tao Te Ching – Lao Tzu (Chinese Taoist Text)* |
| **Session 3** | • Being and Doing<br>• Attention<br>• Martha and Mary, Gospel of Luke (Christian Text)* |
| **Session 4** | • Stages of Mantra Meditation<br>• Levels of Consciousness<br>• Health and Meditation<br>• Parable of the Mustard Seed (Buddhist Text)* |
| **The purpose of the texts in the context of this programme was to experience reading a contemplative text and consider its significance in your life, to explore the concepts of stillness and 'being', and to understand meditation in relation to these texts.* | |

## COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

| Topic | Item No. | Guide Questions/Description | Reported on Page No. |
|---|---|---|---|
| **Domain 1: Research team and reflexivity** | | | |
| *Personal characteristics* | | | |
| Interviewer/facilitator | 1 | Which author/s conducted the interview or focus group? | 6 |
| Credentials | 2 | What were the researcher's credentials? E.g. PhD, MD | N/A |
| Occupation | 3 | What was their occupation at the time of the study? | Title Page |
| Gender | 4 | Was the researcher male or female? | 6 |
| Experience and training | 5 | What experience or training did the researcher have? | 8 |
| *Relationship with participants* | | | |
| Relationship established | 6 | Was a relationship established prior to study commencement? | 6 |
| Participant knowledge of the interviewer | 7 | What did the participants know about the researcher? e.g. personal goals, reasons for doing the research | 8 |
| Interviewer characteristics | 8 | What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic | 8 |
| **Domain 2: Study design** | | | |
| *Theoretical framework* | | | |
| Methodological orientation and Theory | 9 | What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis | 7 |
| *Participant selection* | | | |
| Sampling | 10 | How were participants selected? e.g. purposive, convenience, consecutive, snowball | 7 |
| Method of approach | 11 | How were participants approached? e.g. face-to-face, telephone, mail, email | 7 |
| Sample size | 12 | How many participants were in the study? | 7 |
| Non-participation | 13 | How many people refused to participate or dropped out? Reasons? | 7 |
| *Setting* | | | |
| Setting of data collection | 14 | Where was the data collected? e.g. home, clinic, workplace | 6 |
| Presence of non-participants | 15 | Was anyone else present besides the participants and researchers? | 6 |
| Description of sample | 16 | What are the important characteristics of the sample? e.g. demographic data, date | 7 |
| *Data collection* | | | |
| Interview guide | 17 | Were questions, prompts, guides provided by the authors? Was it pilot tested? | 6 |
| Repeat interviews | 18 | Were repeat inter views carried out? If yes, how many? | 6 |
| Audio/visual recording | 19 | Did the research use audio or visual recording to collect the data? | 7 |
| Field notes | 20 | Were field notes made during and/or after the inter view or focus group? | 7 |
| Duration | 21 | What was the duration of the inter views or focus group? | 7 |
| Data saturation | 22 | Was data saturation discussed? | 7 |
| Transcripts returned | 23 | Were transcripts returned to participants for comment and/or | 7 |

| Topic | Item No. | Guide Questions/Description | Reported on Page No. |
|---|---|---|---|
| | | correction? | |
| **Domain 3: analysis and findings** | | | |
| *Data analysis* | | | |
| Number of data coders | 24 | How many data coders coded the data? | 2 |
| Description of the coding tree | 25 | Did authors provide a description of the coding tree? | 7 |
| Derivation of themes | 26 | Were themes identified in advance or derived from the data? | 7 |
| Software | 27 | What software, if applicable, was used to manage the data? | 7 |
| Participant checking | 28 | Did participants provide feedback on the findings? | 7 |
| *Reporting* | | | |
| Quotations presented | 29 | Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number | 10-15 |
| Data and findings consistent | 30 | Was there consistency between the data presented and the findings? | 17 |
| Clarity of major themes | 31 | Were major themes clearly presented in the findings? | 9 |
| Clarity of minor themes | 32 | Is there a description of diverse cases or discussion of minor themes? | 9-15 |

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

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BMJ Open

# Mantra Meditation Programme for Emergency Department Staff: A Qualitative Study



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| | |

**TITLE PAGE:**

# Mantra Meditation Programme for Emergency Department Staff: A Qualitative Study

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## ABSTRACT

**Objectives:** Rates of burnout and stress in healthcare practitioners (HCPs) are steadily increasing. Emergency Department (ED) staff are particularly susceptible to such poor outcomes. Mantra meditation (MM) may contribute to increased wellbeing. The primary aim of this study was to obtain in-depth qualitative feedback on ED staff's experience of a MM programme. A secondary objective was to harness staff's perception of the ED working environment.

**Design:** Qualitative study.

**Setting:** Emergency Department in St. James' Hospital, Dublin, Ireland.

**Participants:** Doctors, nurses, allied health professionals and administrative staff ($n$=10, eight females, mean age 35.6 years) working in the ED who attended a mantra meditation programme.

**Method:** Semi-structured interviews were conducted by a trained independent researcher. Interviews were transcribed and thematically analysed.

**Results:** Five main themes and six subthemes were identified: work pressure and perceived stress; perceived benefits of meditation (with subthemes of increased attention/awareness, improved emotion regulation and new coping mechanisms, relaxation and sleep quality); conflicting attitudes to practice; barriers to meditation practice (with subthemes of schedule, length of practice and individual differences); and facilitators to practice.

**Conclusion:** ED staff in this study described the demands of their work and voiced a need for a workplace wellbeing programme. Our findings suggest that MM might represent a viable tool to develop attention and awareness, improve emotion regulation and improve their capacity to cope with stress, which may impact their workplace wellbeing, wider health service, patient safety and quality of care. Support from the organisation is considered to be integral to embedding of a workplace wellbeing programme such as the practice of meditation into their daily lives.

**Keywords:** mantra, meditation, healthcare professionals, emergency department, wellbeing, qualitative study

## STRENGTHS AND LIMITATIONS

- In-depth interviews offered an exclusive insight into the personal experiences of mantra meditation from the perspective of emergency department staff.
- The study utilised a validated qualitative approach (thematic analysis) to analyse the rich and complex data, thus contributing important new insights to existing research on the benefits of meditation for healthcare practitioners.
- The findings from participant interviews highlight potential issues of feasibility in implementing a wellbeing programme for emergency department staff, and provide a unique insight into what works and what doesn't for future research in occupational health interventions.
- Adherence to mantra meditation practice was not consistent across participants, which must be taken into consideration when interpreting results.

## INTRODUCTION

The prevalence of burnout amongst healthcare practitioners (HCPs) exceeds that of any other professional working group.[1 2] Emergency medicine doctors in particular report the highest percentage of burnout of twenty-five different healthcare specialties in a large-scale US study[3], with similar findings documented in Ireland.[4] The implications of such a working environment are detrimental and include compassion fatigue, cynicism,[5] depression[6] and even suicide.[7 8] The adverse consequences extend far beyond the wellbeing of the individual, and are reported to have a wider impact on patient safety, quality of care,[9-12] absenteeism[13] and early retirement,[14 15] thus making it an issue of critical importance not only for the HCP, but for all stakeholders involved in healthcare delivery.

There are numerous studies on the various sources of stress for doctors, nurses and allied health professionals (AHPs) working in the emergency setting, however, studies on interventions to offset this occupational stress are scarce. In the general population, there is evidence to support the benefits of meditative practice (amongst other mind-body interventions such as mindfulness and yoga), and its potential to positively impact the health and wellbeing of HCPs is being increasingly recognised. A recent US study of HCPs undertaking a 'Heartfulness Meditation' programme demonstrated significant improvements in all measures of burnout following the 12-week course.[16] Significant reductions in stress and anxiety were also reported in nurses after a one-month biofeedback-assisted meditation programme.[17]

Mantra meditation (MM) or mantram repetition (which includes Transcendental Meditation TM®) involves the act of repeating a word or phrase, silently or aloud, and is considered an ancient practice with roots in spiritual traditions. Recently, MM has emerged as a 'rapid-focus tool' for training attention and calming the mind.[18] It has been suggested that MM offers a number of practical advantages over other types of mind-body interventions including simplicity and portability.[19] MM has been employed as an intervention to limit stress in healthcare workers in a small number of studies, resulting in improvements in self-reported spiritual wellbeing, mindfulness traits, stress, anxiety, anger and quality of life.[20-22] Such workplace health programmes have been identified by the World Health Organisation (WHO) as one of the 'best buy' options for mental health and wellbeing of employees.[23] Nonetheless, rigorous evaluation is essential if such interventions and programmes are to be successfully integrated into the busy working environment and lives of HCPs. The acquisition of in-depth qualitative feedback is considered to be a crucial aspect of this

process; complementing and enhancing the quantitative evaluation by providing enriched understanding and descriptions of personal experiences of MM, as it is situated and embedded in a local context.[24 25] Qualitative syntheses exploring health care workers' experiences of mindfulness training have been conducted,[26] thus is it considered timely and appropriate to acquire similar qualitative feedback from HCPs for MM.

**Study Objectives**

The primary objective of this study was to qualitatively evaluate a MM programme in an ED setting by harnessing participants' experience and perceived impact of the programme. A secondary objective included identifying staffs' perception of their working environment.

## METHODS

### Design

This qualitative study was conducted in parallel to a randomised controlled trial (RCT) investigating the effect of mantra meditation on quantitative indicators of burnout, as well as psychological and physiological markers of health in ED staff.

The data collection for this qualitative study – individual, semi-structured interviews – was conducted in the study participants' workplace within eight weeks of the final session of the mantra meditation programme by a member of the research team (COL). The interviews followed a topic guide (Table 1); the open-ended format of the interviews was selected in order to thoroughly explore the participants' experience and perception of the programme. Length of interviews ranged from 16 to 58 minutes ($M$=38.28, $SD$=11.91). Participants were advised that they could withdraw from the study at any time and were informed that all transcripts would be anonymised. Institutional ethics committee approval was in place.

### Mantra Meditation (MM) Programme

The objectives of the mantra meditation programme were to teach participants the basic principles and practice of MM in their workplace and to support the embedding of the practice of MM in their daily lives. The programme consisted of four sessions (each four hours long) and was delivered in the hospital over a six-week period. Each session followed a structured manual and combined meditation practice, talks on different aspects of meditation (i.e. physical preparation for meditation, dealing with distractions, being and doing) and discussion of contemplative texts related to meditation practice and the meaning of healthcare (see Supplementary File 1). Additionally, participants were asked to meditate independently for 20 minutes twice a day (preferably morning and evening). The mantra used in this programme was *maranatha*, broken into four syllables: ma-ra-na-tha. The mantra meditation programme was developed and co-facilitated by a healthcare expert and a meditation expert in 2013 and was originally delivered in a classroom setting. The established MM programme was adapted to be delivered in the workplace. Neither of the facilitators were involved in any elements of the research study, e.g. data collection, analysis or interpretation.

**Table 1**
**Topic Guide**

| Interview topics | Sample questions |
|---|---|

| | |
|---|---|
| Rapport-building | • Can you tell me a bit about your role in the Emergency Department? How would you describe your work?<br>• What was your motivation for taking part in the meditation programme?<br>• What was your experience of meditation during the programme? |
| Impact of meditation programme on self | • What has work been like for you since taking part in the programme?<br>• If you were to compare yourself before and after taking part in the programme, what observations would you make, if any?<br>• Can you tell me about any changes you may have noticed in how you perceive yourself? |
| Impact of meditation programme on others | • Can you tell me about any changes in how you perceive others? Colleagues/patients/your interactions with them? How do you think this programme has been perceived by staff in the Emergency Department?<br>• If you were to compare your colleagues before and after taking part, what observations would you make, if any?<br>• If you were to compare the working environment in the Emergency Department before and after the programme, what observations would you make, if any? |
| Current practice and looking forward | • Can you tell me about your meditation practice since the programme has ended?<br>• Can you tell me about some of your external/internal challenges to practicing meditation?<br>• What would help you to maintain a consistent meditation practice? |



## Participants and Recruitment

As part of an ongoing RCT[27], 17 members of ED staff (10% of the department) were assigned to an intervention group to attend a MM programme. Participation in the RCT (and subsequently the programme) was voluntary, free of charge, and the programme was delivered during working hours. Attendance rates for the whole group varied over the course of the programme (77%, 100%, 59% and 41% for Session 1, 2, 3 and 4 respectively). All 17 staff members were invited to take part in the qualitative study. Ten participants agreed to participate in the qualitative aspect of the study. The sample was generally representative of the gender and age breakdown (eight females, mean age 35.6 years), the roles (e.g. nurse practitioner, emergency doctor, allied health professional) and length of ED experience (nine months to 17 years) of the wider ED department. Attendance rates did not differ substantially between those who agreed to interview (mean attendance rate: 65%) and those who did not (mean attendance rate: 65.63%). Further breakdown of individual participant characteristics will not be provided to preserve anonymity. While a greater sample size would have been favourable, upon completion of all ten interviews, data saturation was achieved.

## Data Analysis

Interviews were audio-recorded and transcribed verbatim by a professional transcription service. The transcription was checked by a member of the research team to remove any identifiable information and participants were offered the opportunity to review their transcripts. QSR International's NVivo 11 (qualitative data analysis software, v.11) was used to store and analyse the data. Thematic analysis methodology[28] guided analysis of the data

(conducted by JL) and involved familiarisation with the data, generating initial codes, searching for themes, reviewing and refining themes, and defining final themes. A second member of the research team (LP) coded an interview transcript independently to assess inter-rater reliability and differences in the interpretation of the data were discussed. Agreement was high in the comparison of codings. Minor editing of the quotes was performed to ensure clarity of meaning and to preserve anonymity. Overall, the research team was multi-disciplinary but both researchers involved in data analysis had backgrounds in psychology. Researchers conducting the data analysis (JL and LP) were experienced in qualitative data analysis and entirely independent from the MM programme to avoid confirmation bias.

**Patient and Public Involvement**

Extensive stakeholder consultation (which included a senior staff member of the emergency medicine department) on the design of the MM programme and the research study was conducted. There was no patient or public involvement in the recruitment process. The study findings will be disseminated to all study participants by way of email, in an appropriate, reader-friendly format. The final published manuscript will be made available to participants and relevant stakeholders upon request.

## RESULTS

Thematic analysis identified five prominent themes in the data: 1) work pressure and perceived stress; 2) benefits of meditation practice; 3) conflicting attitudes to practice; 4) barriers to practice; and 5) facilitators to practice (see Table 2).

### Theme 1: Work Pressure and Perceived Stress

Work pressure and perceived stress was a highly prominent theme, with every participant reporting on the pressure of their work environment encountered on a regular basis, and the need for a wellness programme to be implemented not only in the ED but also pan-hospital. This was further reflected in comments and discussions about the complexities and tragedies of patients presenting to the ED on a daily basis.

Several participants made reference to the nature of uncertainty that pervades the ED on any given day; HCPs often experience "an element of impending doom" or anxiety prior to their work shift. It was acknowledged that death in the ED (which is almost always sudden and unexpected) can be particularly difficult to manage and that while patients are being attended to for their physical injuries, they tend to disclose their own personal stories and issues onto the HCP.

> "There is huge complexities behind all of their stories… you might have…addressed their injury but then there is the whole [story], you are kind of counselling nearly, I find in this job you are counselling a lot and I suppose that is probably part and parcel of what the HCP does and that development of that relationship you have with your patients but it can get very heavy at times with what they are telling you, you know."

The ED working environment was regularly cited as taxing, with most participants referring to sheer exhaustion, poor sleep patterns, the department being under-staffed, difficulty adjusting to shift-work and just constantly feeling "switched on".

> "You go home and you are either absolutely wired or you crash and burn and you don't intervene and then you're kind of tossing and turning, nearly anxious waiting for the next day. Then you get up and do it all again."

It was noted by several participants that staff are torn in different directions and that stress emanating from one person often eventually filtered around to everybody else, from reception staff and cleaners to doctors and nurses. Generally, every participant recognised the need for a programme of support for the ED staff.

"You can't keep running at a certain pace without intervening because as I say, it is like a marathon, you come in and you face the same thing every day, day in day out and you will burn if you don't mind yourself and you don't take care of yourself."

"You can't maintain that without having either some mental or physical effects."

The working environment of the ED lends itself to staff burnout and exhaustion, to such an extent that some members of staff noted that ten years is the maximum amount of time you can give to the profession. Participants reported poor work-life balance, and found it difficult to "cease the chatter" of their minds when they return home.

**Table 2**
**Themes, subthemes and illustrative quotes**

| Theme | Subtheme | Illustrative quotes |
|---|---|---|
| **Work Pressure and Perceived Stress** | -- | "Burnout is high and stress levels are very high, especially in the ED."<br>"It is stressful, it is tough and you are short-staffed and nights can be pretty taxing."<br>"We are in an environment that is highly stressed, it is constant, it is traumas, it is just constantly switched on."<br>"We have to do something down there in terms of wellbeing."<br>"There has to be an intervention because, as I say, it will just have grave effects I think on people's health"<br>"You cannot keep running at this sort of pace constantly, it's just not doable." |
| **Perceived Benefits of Meditation** | **Increased Awareness and Attention** | "I think it does enable you to kind of just see things from a different angle maybe."<br>"It's definitely made me more mindful (…) more aware of my surroundings"<br>"It just kind of settles you and kind of focuses you maybe a little bit more, you're a little bit clearer in what you need to [do]…"<br>"It focused me on I suppose my key objectives for the day and what I had to get done"<br>"I have actually pulled back a bit from being tremendously busy, like trying to be busy all the time." |
| | **Improved Emotion Regulation and New Coping Mechanisms** | "I think my coping mechanisms at work are a lot better."<br>"People can come up to you and they can be quite forthright in whatever they say and it is literally just say the word and then just to yourself and deep breath and then you go, "OK, let's deal with this now", instead of getting all tensed up and angry with somebody who is blaming you for something that is not your fault basically."<br>"Instead of leaping in there, I just take a breath and step away. You know nothing major I am talking about just general home stuff, kids and husbands."<br>you wouldn't let the small things bother you as much because you kind of take a step back and think, "Well, no"<br>"I think my patience is definitely a lot better than it was"<br>"I would definitely say I am a calmer person." |
| | **Relaxation and Sleep Quality** | "You sleep an awful lot better, just more relaxed and you're not kind of wound up"<br>"It is a great opportunity to help you sleep and maybe that is where it should work."<br>"I feel way better in myself. My sleep has improved"<br>"I'd kind of intermittently sleep good and sleep not so good but I have been sleeping fine since this" |
| **Conflicting Attitudes to Practice** | - | "I just personally wish I was better at doing it by now..."<br>"You'd nearly feel guilty about having this time to yourself just thinking about doing nothing you know"<br>"If I could convince myself that I am entitled to this me time instead of having to do something else, then that is where I think it works better." |
| | **Role/Occupation (shift work, changing schedules)** | "If you are in a senior role on the floor you kind of can't really leave the department (to meditate) because if something kicks off you have to be there to respond."<br>"Because of my role, I'd say it was, just from personal experience, it was harder to adjust because it's not a kind of a uniformed shift pattern so it could be 8am to 6pm one day, 4pm to midnight the next day, and then 8am to 6pm, you know…and then when you get home after such a busy day unless you set an alarm or something like that, you'd be asleep before you'd go, "Christ, meditate!"<br>"Doing this amongst ED staff is probably the hardest group of people to do it with." |

| | | |
|---|---|---|
| **Barriers to Practice** | **Length of Practice** | "I think that going from never experiencing it into jumping straight in, 20 minutes twice a day I found that quite hard."<br>"The shorter time would make it a lot more viable in the department I would think." |
| | **Individual Differences** | "I would be a doer, go, go, go and a lot of people in the department would be kind of the same that kind of temperament. So then when you have to sit down and sit still and think about things or not think about anything, I found it really hard to switch off."<br>"I think you have to the right personality as well, like, you know, it is not something that, if meditation worked for one person, it mightn't necessarily work for the next person." |
| **Facilitators to Practice** | **Organisational Support** | "I personally think it needs to be part of our paid working day to really promote it to be best practice."<br>"It's all down to staffing – if you had enough staff you could do protected time and you'd say, "Okay we're doing a meditation, a group meditation for 20 minutes upstairs or 10 minutes upstairs. Go on up."<br>"I think if it was incorporated as part of our day so I think if there was an extra 15 minutes each side of each shift incorporated for meditation." |
| | **Interpersonal Support** | "I found actually doing it in the group was a lot easier than doing it on my own."<br>"Since the programme has ended, I have kind of lost the focus again with the meditation and I just wonder if there was another workshop would it kind of refocus you."<br>"I just think we need to kind of get together perhaps as a group and set up something by ourselves or take the lead on it by ourselves otherwise it will fall, like it will fall apart." |

## Theme 2: Perceived Benefits of Meditation

In discussing their experience of the meditation programme, staff cited a myriad of benefits in both their personal and professional lives. These have been further broken down into subthemes of *attention and awareness*, *emotion regulation/coping skills* and *sleep*.

### *Increased Attention and Awareness*

One of the key personal benefits that arose amongst participants was a sense of heightened situational awareness. They felt better equipped to see things from a different angle, as well as an improved awareness of themselves.

> "I was always one to say, "I'm not stressed, I'm not stressed", through clenched teeth and believe it. Whereas now I'm saying, "Hang on, I'm very stressed and I'm taking it out on…"."

Participants discussed how the programme and practice of meditation helped them to refocus, particularly when faced with a long shift where priorities and objectives had to be decided upon. This sense of attention and 'refocusing' was also echoed in their interactions with patients, and the process of moving from one patient within emergency to another.

> "I think hopefully this will improve recovery…you're dealing with an emergency that has been dealt with and they move on, but I need to be able to (move on) and it is about me, I need to be able to recover quickly, so I can give the next patient my full attention. Because I know sometimes if I am worried about somebody, I will be distracted with the next patient. So I felt this would actually help my recovery as such, so that I will have full attention for the next patient."

This renewed attention and awareness of themselves and their surroundings extended to a more favourable work-life balance for some.

> "I sort of got a bit too sucked in to work and I found it very hard to escape it really. I felt my whole world was dominated by my job and now that has kind of stopped."

***Improved Emotion Regulation and New Coping Mechanisms***

Participants noted an improvement in coping with a hectic life at home and at work, as well as the cultivation of a more patient attitude.

> "It grounded me I suppose is a better word, but it calmed me. So even though like I think I have hundred and one jobs to do, it kind of calmed me and when I do it at work, it calms me…"

Some participants discussed improved coping mechanisms while at work, and feeling more competent at managing emotionally-laden, stressful, emergency situations.

> "I used to get emotional when stuff would come in to Resuscitation, but now I kind of… I think I have just learned to manage it better."

***Relaxation and Sleep Quality***

An improvement in quality of sleep was reported by many of the participants, both for those with regular and irregular shift patterns.

> "What I have observed is that I think on the days that I am working, say if I am working today and I was working tomorrow, I don't really sleep very well. And certainly I think this is intervened, I definitely sleep better."

**Theme 3: Conflicting Attitudes to Practice**

Despite myriad accounts of the benefits of meditation on participants' personal and professional lives, some participants noted conflicting attitudes they experienced towards the practice of meditation. Such feelings (predominantly associated with guilt) arose due to not engaging successfully with the practice, or alternatively, due to taking the time out to engage in the practice when there were other jobs to be done.

> "I am just really disappointed in myself that I didn't put more effort in to the meditation…"

> "You still feel guilty sometimes, taking time out like that when there is stuff to be done or work to be done…"

There was also a distinct sense of staff feeling responsible for leaving work colleagues short-staffed, when attempting to meditate during work hours.

> "You've also got that kind of little niggle in the back of your head saying, "There's one specialist trainee doctor back there with a junior doctor and the department is heaving. So it's nice that I can get to this but, you know, our brothers in arms are back there at the coal-front fighting on six different fronts when we could have made it three", kind of thing."

**Theme 4: Barriers to Practice**

Participants reported several major barriers to practicing meditation; the practicalities of their role (i.e. shift work, changing schedules), the recommended length of practice, and the typical profile or personality of a HCP.

***Shift Work/Changing Schedules***

The role of the individual in the ED and the practicalities of their contract (i.e. long working hours, night shifts, changing schedules) was proposed as a barrier to developing regular practice by most participants. For majority, uniform shift patterns are not common for ED staff, making it difficult for them to incorporate daily meditation into their schedule as a concrete habit. Similarly, the strenuous work environment inevitably results in fatigue which also poses a barrier to an evening practice.

> "…When we came home it could be half nine or ten o'clock, you are prepping your food for the following day if you were in the following day…but sometimes you go home and you are just flat like, you are just exhausted and you are kind of there opening your eyes partly wondering how long is left on the timer."

> "…There was a period at work where things were just mental and that fatigue hits in, and you are just like, "Oh no I will do it tomorrow"."

The unpredictable nature of work in the ED means that it is not feasible to dedicate protected time to meditate during the working day as staff are expected to be close-by the department at any given time in case their services are urgently required.

***Length of Practice***

Each participant expressed at least some difficulty in maintaining the twice daily 20-minute meditation practice as advised by the programme facilitators and several participants commented that adherence to the practice was driven by their participation in the study, rather than actually contributing towards their own health. Participants reported difficulty staying with the meditation for the full 20 minutes, as well as difficulty finding an appropriate time period during the day in which to fit the practice. Several participants recommended that

the practice be gradually built up over time, perhaps starting with five minutes twice a day or ten minutes once a day.

> "It's like training for something… you are not going to go off and do a 10K [run] if you can't do that or if you know that you don't have the time to do it, so start off with doing something achievable and then build on it."

It was suggested that this would encourage the development of a more sustainable and feasible practice for novice meditators.

***Individual Differences***

It was notable that many of the staff considered themselves to be highly active, outgoing individuals, and they felt this contrasted with what was being asked of them in meditation practice.

> "I think we have all got similar personality types and you know of being fast paced, busy you know go, go, go, I think we are probably the hardest group you will find to switch off a little bit."

An interesting concept was brought to light by one participant who explained that what drew them to working in that kind of an environment in the first place, was the very thing that was preventing them from committing to meditative practice.

> "I think what led me to Emergency was what stood against me delving fully into mantra meditation, as in sitting still and not focusing. Whereas I like to be kind of hypermobile in the department, if I'm sitting for more than five minutes I have to get up and check another patient or do that. So it was the actual disconnect that I was like, "Woah hang on, I'm not used to this"."

There was a distinct sense from the transcripts that participants believed certain people 'fit the bill' for meditation, whereas others didn't. Those who 'fit the bill' tended to be described as more easy-going, with mellow personalities.

> "There are a huge amount of different personalities in the ED, the majority of them are really strong, opinionated, loud personalities, you know and I don't know if meditation would suit everybody."

**Theme 5: Facilitators to Practice**

A strong desire to continue with daily meditation practice and a wish to thoroughly integrate meditation into the workplace was clearly evident throughout the interviews. In discussing factors that facilitated their practice and factors that would enable them to continue this

practice, participants spoke primarily of support from the organisation and support from each other.

***Organisational Support***

Support from the organisation (i.e. the hospital) was broken down by participants and generally fell into the category of either protected time or protected space. Support at an organisational level would mean that enough staff are scheduled to work for somebody to leave the floor to meditate for a brief period of time.

> "I'd say during the day if you were going off to tell somebody in the middle of a shift that you were going off to do your meditation, it would kind of be seen as…not favourable…."

There was also a recognised need for a protected space to meditate while in work. Overall, there was a general consensus that support at an organisational level would be paramount to facilitating and promoting staff wellbeing going forward.

> "I personally think it needs to be part of our paid working day to really promote it to be best practice."

***Interpersonal Support***

The importance and value of group support was widely recognised, both throughout the training programme and in encouraging daily meditation practice thereafter. With the exception of one, most participants found meditating in a group much easier, more enjoyable and felt they were better able to stay focused, in contrast to meditating alone. This was attributed to a sense of being accountable to other people rather than just being accountable to yourself, as well as an attitude of "If they can do it, I can do it".

The importance of the group for the training programme was instrumental to teasing out barriers and enablers to practice.

> "As a group I think it has been really good to listen to other people's experiences and them relaying the same to you and having a bit of collaboration amongst the group."

Outside of the programme, the group offered support and encouragement to each other to help maintain regular practice and members of the intervention group looked forward to other members of staff completing the MM programme so that they might have more colleagues to share their practice with.

> "It will be really interesting when the second group do it because then there will be twice as many of us having done it and hopefully it will just bounce off each other to promote it."

Drop-in group meditations, refresher sessions and other supports such as social network groups were suggested as potential methods to support the staff in their continuation of meditation practice once the training programme ceased. This was considered vital as participants relied quite heavily on the training sessions to refocus and re-motivate themselves to engage in MM practice.

## DISCUSSION

In this study, we conducted semi-structured interviews with the objective of harnessing ED staffs' experience of participation in a MM training programme. Our findings lend further support to earlier research on mind-body interventions that utilise the mantra for healthcare staff,[21 22] but also offer some valuable insights and novel contributions to the literature including perceptions of staff wellbeing in the ED, the potential contribution of meditation to the personal and professional lives of healthcare professionals, as well as barriers and enablers to implementing wellbeing programmes in healthcare settings. It is important to note that while the topic guide was referred to in order to enhance questioning and elicit greater depth of information from participants, the themes presented in the results emerged consistently throughout the interview and were not direct outcomes of the probing questions from the guide.

A relentlessly fast-paced culture, inconsistent shift work and the nature and severity of cases that present to the department on a daily basis make for a profusely stressful working environment. Participants were cognisant of the detrimental impact of such a working environment on their wellbeing and demonstrated a clear interest in developing a meditation programme within the department. Such reports from participants offer a compelling argument for the implementation of wellbeing interventions for ED staff. While previous research has documented the positive impact of mind-body interventions such as mindfulness programmes[29] and yoga[30] on burnout and stress in healthcare staff, further research is warranted to validate and compare the MM programme with other approaches.

Similar to other studies on MM, participants reported widespread benefits of MM including enhanced attention and improved sleep quality[20]. While some participants found meditation practice useful in helping them to fall asleep, others found that the daily practice improved the quality of their sleep. This has important consequences for the applicability of a MM training programme in an ED. Circadian rhythm disruption (CRD; an interruption to the internal body clock that regulates the 24-hour cycle of biological processes[31]), is common amongst those who carry out shift work. ED staff are particularly susceptible to CRD[31] and can experience widespread ill-effects on their wellbeing as a result. It is possible that MM might buffer the effects of CRD by helping to improve the sleep quality of ED staff, thus boosting their overall health and productivity. Improved focus and attention among practicing ED staff might also contribute to enhanced patient safety, quality of care and patient satisfaction. While the impact of the programme on others in the department (patients and

working professionals alike) was included as a specific point of discussion in the topic guide, it is notable that insufficient information was provided by participants to elaborate on this. Participants seemed to find it easier to relate the answers of the questions directly to their own experiences, rather than speculating on the potential impact on other people. It is suggested that closed questioning (rather than open-ended questioning) in this regard may have been more useful to elicit such perspectives.

Despite the widely cited benefits, participants of the programme acknowledged difficulties in maintaining the recommended frequency and duration of meditation practice (practice compliance). This has important implications for the future development of this specific training programme and indeed other meditation programmes. Respondents placed a strong emphasis on the importance of building up meditation practice gradually rather than attempting too much too soon. Those who approached the meditation practice target of 20 minutes, twice daily with an all-or-nothing attitude, appeared to cease practicing altogether. Given the reported benefits despite poor adherence to meditation, future research may further explore the minimal duration of practice required in order to elicit positive outcomes for the individual.

A prominent culture of presenteeism[32 33] suggests that HCPs may have little insight into their own health and wellbeing, and a dearth of self-care and wellbeing training in medical school curricula[34] demonstrates that little emphasis is placed on a preventative or pro-active approach. This was reflected in several participants' comments whereby they felt the need to meditate and adhere to the practice solely for the sake of the research, rather than actually contributing towards their own health. These responses have important implications for the design and delivery of meditation programmes among HCPs and highlight the need for a more proactive, collaborative approach to address self-care and wellbeing training for HCPs.

The findings of this study suggest that further support is required if meditation programmes are to become embedded into busy hospital environments. This support would ideally be offered in both formal and informal settings, with follow-up workshops and retreats offered by specialist facilitators, as well as more casual staff-organised group meditation sessions (daily, weekly or monthly). The provision of these wellness-based programs will be a cost to the institution. However, the potential cost of absenteeism, early retirement and sick leave as a result of burnout potentially outweighs the cost. A recent

Canadian study calculated the total cost of burnout for all practicing physicians in Canada to be $213.1 million.[14] Johnson & Johnson estimated that in-house wellness programmes cumulatively saved the company $250 million on health care costs between 2002 and 2008.[35] It is time that employee wellness programmes become strategically integral to healthcare.

**Strengths and Limitations**

This qualitative study is to our knowledge the first study of a MM programme for ED staff. We employed a validated method to analyse the data; thematic analysis. Additionally, independent researchers unknown to the participants analysed the interviews to reduce any risk of bias. The questions employed in the interviews in this study were open-ended to mitigate against bias, however, response bias is inevitable in qualitative research and must always be taken into consideration. The study participants were diverse in their roles and work experience, implying that these findings could be applied to different healthcare professionals. That being said, participation in both the programme and the interviews was entirely voluntary, which presents the possibility of self-selection bias and limits the extrapolation of findings.

The sample represented the diverse range of roles and experience in the ED, however, a larger sample size would have benefited the study. It is possible that those who volunteered to interview were more enthusiastic about MM than those who did not. As the participants struggled to maintain consistent adherence to MM practice over the period investigated, increased adherence might proffer different findings as well as more robust benefits. Further research in this area is warranted to explore the implications of such a programme on wider hospital operations (including patient safety and quality of care), as well as overcoming the practical limitations of implementing wellbeing programmes in busy clinical settings.

## CONCLUSION

This study offers in-depth qualitative feedback on participants' experience of a MM programme and their perception of ED working conditions. The emergency department working environment as conveyed by interviewees advocates a desire for such a programme of support for staff. More importantly, however, it supports and contextualises quantitative research that demonstrates concerning levels of burnout and stress in this particular occupational setting,[3 4] highlighting an urgent need for action. Participants' unique insight into their perception of the meditation practice suggests that by way of improved attention, awareness and coping skills, MM may have an extended impact on wider healthcare operations, including enhanced HCP-patient interaction, quality of care and patient safety. A flexible approach to length and regularity of meditation practice is of importance when attempting to integrate sustainable practice among HCPs in the ED. Finally, support from the organisation is not only necessary for sustained practice, but should be viewed as a strategic imperative along with other approaches focused on improving workplace wellbeing.

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## COMPETING INTERESTS

Authors declare no competing interests. Study sponsor had no involvement in study design, data collection, analysis or interpretation, writing of the report, or deciding to submit the paper for publication.

## DATA SHARING STATEMENT

As per the ethics approval, the data will not be shared outside of the participating research institutions. Any sharing of the data beyond the group will be subject to review by the host institution (Royal College of Physicians of Ireland) and to independent research ethics application. Any queries on how to access the dataset should be directed to the corresponding author or research@rcpi.ie.

## CONTRIBUTORSHIP STATEMENT

COL, RB, BW, LP, PD, GMcM, CW and AC were involved in conceiving and designing the study. Data collection was carried out by COL. JL and LP were responsible for data analysis and interpretation. JL wrote the first draft of the manuscript. COL, RB, BW, LP, PD, GMcM, CW and AC contributed to subsequent drafts and were involved in the critical revision of the article for important intellectual content. All authors approved the final version of the article to be published.

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**Supplementary File 1 – Overview of Mantra Meditation Programme**

| | |
|---|---|
| **Session 1** | • Introduction to Meditation<br>• Physical Preparation for Meditation<br>• A Brief History of Meditation Practices<br>• Katha Upanishad (Indian Hindu Text)* |
| **Session 2** | • Dealing with Distractions<br>• Evaluations<br>• Developing the Practice<br>• Tao Te Ching – Lao Tzu (Chinese Taoist Text)* |
| **Session 3** | • Being and Doing<br>• Attention<br>• Martha and Mary, Gospel of Luke (Christian Text)* |
| **Session 4** | • Stages of Mantra Meditation<br>• Levels of Consciousness<br>• Health and Meditation<br>• Parable of the Mustard Seed (Buddhist Text)* |
| **The purpose of the texts in the context of this programme was to experience reading a contemplative text and consider its significance in your life, to explore the concepts of stillness and 'being', and to understand meditation in relation to these texts.* | |

## COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

| Topic | Item No. | Guide Questions/Description | Reported on Page No. |
|---|---|---|---|
| **Domain 1: Research team and reflexivity** | | | |
| *Personal characteristics* | | | |
| Interviewer/facilitator | 1 | Which author/s conducted the interview or focus group? | 6 |
| Credentials | 2 | What were the researcher's credentials? E.g. PhD, MD | N/A |
| Occupation | 3 | What was their occupation at the time of the study? | Title Page |
| Gender | 4 | Was the researcher male or female? | 6 |
| Experience and training | 5 | What experience or training did the researcher have? | 8 |
| *Relationship with participants* | | | |
| Relationship established | 6 | Was a relationship established prior to study commencement? | 6 |
| Participant knowledge of the interviewer | 7 | What did the participants know about the researcher? e.g. personal goals, reasons for doing the research | 8 |
| Interviewer characteristics | 8 | What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic | 8 |
| **Domain 2: Study design** | | | |
| *Theoretical framework* | | | |
| Methodological orientation and Theory | 9 | What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis | 7 |
| *Participant selection* | | | |
| Sampling | 10 | How were participants selected? e.g. purposive, convenience, consecutive, snowball | 7 |
| Method of approach | 11 | How were participants approached? e.g. face-to-face, telephone, mail, email | 7 |
| Sample size | 12 | How many participants were in the study? | 7 |
| Non-participation | 13 | How many people refused to participate or dropped out? Reasons? | 7 |
| *Setting* | | | |
| Setting of data collection | 14 | Where was the data collected? e.g. home, clinic, workplace | 6 |
| Presence of non-participants | 15 | Was anyone else present besides the participants and researchers? | 6 |
| Description of sample | 16 | What are the important characteristics of the sample? e.g. demographic data, date | 7 |
| *Data collection* | | | |
| Interview guide | 17 | Were questions, prompts, guides provided by the authors? Was it pilot tested? | 6 |
| Repeat interviews | 18 | Were repeat inter views carried out? If yes, how many? | 6 |
| Audio/visual recording | 19 | Did the research use audio or visual recording to collect the data? | 7 |
| Field notes | 20 | Were field notes made during and/or after the inter view or focus group? | 7 |
| Duration | 21 | What was the duration of the inter views or focus group? | 7 |
| Data saturation | 22 | Was data saturation discussed? | 7 |
| Transcripts returned | 23 | Were transcripts returned to participants for comment and/or | 7 |

| Topic | Item No. | Guide Questions/Description | Reported on Page No. |
|---|---|---|---|
| | | correction? | |
| **Domain 3: analysis and findings** | | | |
| *Data analysis* | | | |
| Number of data coders | 24 | How many data coders coded the data? | 2 |
| Description of the coding tree | 25 | Did authors provide a description of the coding tree? | 7 |
| Derivation of themes | 26 | Were themes identified in advance or derived from the data? | 7 |
| Software | 27 | What software, if applicable, was used to manage the data? | 7 |
| Participant checking | 28 | Did participants provide feedback on the findings? | 7 |
| *Reporting* | | | |
| Quotations presented | 29 | Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number | 10-15 |
| Data and findings consistent | 30 | Was there consistency between the data presented and the findings? | 17 |
| Clarity of major themes | 31 | Were major themes clearly presented in the findings? | 9 |
| Clarity of minor themes | 32 | Is there a description of diverse cases or discussion of minor themes? | 9-15 |

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

**Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.**